

Department of Chemistry, KSCJ

COURSE OUTCOME

20/10/2021

BSc Chemistry

Title of the paper	INORGANIC CHEMISTRY-01
Course code	CHE CORE-01
Credits	4
Total Hours	60

After successful completion of this paper, the students are expected to /enable to understand

1. Will understand the structure of an atom, its quantum mechanics and the principles that determine the structure of an atom.
2. Have clear understanding about the different chemical bonding in a molecule.
- 3

Title of the paper	INORGANIC CHEMISTRY LAB-1
Course code	CHE CORE-01 (PRACTICAL)
Credits	2
Total Hours	60

After successful completion of this paper, the students are expected to /enable to understand

1. know how to qualitatively analyse a mixture of inorganic salts containing three anions, three cations and an interfering radical.
- 2
- 3

Title of the paper	PHYSICAL CHEMISTRY-01
Course code	CHE CORE-02
Credits	4
Total Hours	60

After successful completion of this paper, the students are expected to /enable to understand

1. Different states of matter and their laws governing them.
2. Acid-Base concepts.
- 3

Title of the paper	PHYSICAL CHEMISTRY-01
Course code	PRACTICAL
Credits	4
Total Hours	60

After successful completion of this paper, the students are expected to /enable to understand

1. To know the concepts of Surface tension, Viscosity etc.

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3

Title of the paper	GENERIC ELECTIVE-01
Course code	ORGANIC CHEMISTRY
Credits	4
Total Hours	60

After successful completion of this paper, the students are expected to /enable to understand

1 The fundamentals of organic chemistry like electronic effects, stereochemical aspects, reaction mechanisms.

2
3

Title of the paper	PRACTICAL GENERIC ELECTIVE-01
Course code	PRACTICAL GENERIC ELECTIVE-01
Credits	2
Total Hours	60

After successful completion of this paper, the students are expected to /enable to understand

1 Analysis of various salts and effect of interfering radicals and their removals

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3
3

Title of the paper	PRACTICAL ORGANIC CHEMISTRY-01
Course code	PRACTICAL
Credits	4
Total Hours	60

After successful completion of this paper, the students are expected to /enable to

1 Detection of elements and functional groups

2 Qualitative analysis

3

Title of the paper	PHYSICAL CHEMISTRY-02
Course code	CORE-04
Credits	4
Total Hours	60

After successful completion of this paper, the students are expected to /enable to understand

1. The concepts of thermodynamics and their laws.
2. To know the relationship between K_p , K_c and K_x and the idea of Le Chatelier principle.
- 3

Title of the paper	PRACTICAL PHYSICAL CHEMISTRY-02
Course code	PRACTICAL
Credits	4
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

- 1
- 2
- 3

Title of the paper	GENERIC ELECTIVE-02
Course code	GE-2
Credits	4
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

- 1 carbohydrates and their structures, properties
- 2 Amino acids, peptides, proteins, lipids and bioinorganic compounds
- 3

Title of the paper	PRACTICAL GENERIC ELECTIVE-02
Course code	GE-2
Credits	2
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

- 1 Detection of elements and functional groups of organic compounds
- 2
- 3
- 3

Title of the paper	PRACTICAL INORGANIC CHEMISTRY-02
Course code	PRACTICAL
Credits	2
Total Hours	

After successful completion of this paper, the students is expected to /enables to

1. Preparation of inorganic compounds.
2. Estimation of copper and chlorine.
- 3

Title of the paper	INORGANIC CHEMISTRY-03
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Course code	CORE-05
Credits	4
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

1. Understand the chemical properties of s-block and p-block elements along with the different processes involve in metallurgical process.

3

3

Title of the paper	PRACTICAL ORGANIC CHEMISTRY-02
Course code	PRACTICAL
Credits	2
Total Hours	

After successful completion of this paper, the students is expected to /enables to understand

1 Synthesis of some simple organic compounds

2

3

Title of the paper	PHYSICAL CHEMISTRY-03
Course code	CORE-07
Credits	4
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

1. Better understanding phase equilibria.

2. Have good knowledge on rate of reactions.

3

Title of the paper	SEC-01
Course code	SEC-01
Credits	2
Total Hours	

After successful completion of this paper, the students is expected to /enables to understand

1. Have knowledge on general properties of various pesticides, its harmful effects and also synthesis of some important pesticides.

2

3

Title of the paper	GENERIC ELECTIVE-03
Course code	GE-03
Credits	4
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

1. Will understand the different types of chemical bonding and properties of transition elements and co-ordination compounds.

2
3

Title of the paper	PRACTICAL GENERIC ELECTIVE-03
Course code	PRACTICAL
Credits	2
Total Hours	

After successful completion of this paper, the students is expected to /enables to

1. Will know how to qualitatively analyse a mixture of inorganic salts containing two anions, two cations and an interfering radical.

2
3

Title of the paper	INORGANIC CHEMISTRY-03
Course code	CORE-08
Credits	4
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

1. Understand the properties of d & f-block elements and the chemistry of co-ordination compounds.

2
3

Title of the paper	PRACTICAL INORGANIC CCHEMISTRY-03
Course code	PRACTICAL-08
Credits	2
Total Hours	

After successful completion of this paper, the students is expected to /enables to understand

1. Will be able to estimate any given inorganic compound gravimetrically.

2
3

Title of the paper	PRACTICAL INORGANIC CCHEMISTRY-03
Course code	PRACTICAL-05
Credits	2
Total Hours	

After successful completion of this paper, the students is expected to /enables to understand

1. Have clear idea about iodometric titrations and also learn how to prepare some important inorganic compounds.

2
3

Title of the paper	ORGANIC CHEMISTRY-03
Course code	CORE-09
Credits	4
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

1 Organic compounds having amine, nitro, diazo
2 Polymers, heterocyclic compounds, alkaloids and terpenes
3

Title of the paper	PRACTICAL ORGANIC CHEMISTRY-03
Course code	PRACTICAL
Credits	2
Total Hours	

After successful completion of this paper, the students is expected to /enables to understand

1 Purification of organic compounds
2 determination of boiling and melting points
3

Title of the paper	PHYSICAL CHEMISTRY-04
Course code	CORE-10
Credits	4
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

1. Different types of conductance and their properties.
2. Differentiate between classical and quantum mechanics.
3

Title of the paper	PRACTICAL PHYSICAL CHEMISTRY-04
Course code	PRACTICAL
Credits	2
Total Hours	

After successful completion of this paper, the students is expected to /enables to understand

1. Better understanding of thermochemistry.
2
3

Title of the paper	SEC-02
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Course code	SEC-02
Credits	2
Total Hours	

After successful completion of this paper, the students is expected to /enables to understand

1. Drugs and pharmaceuticals
2. Fermentation.
- 3

Title of the paper	GENERIC ELECTIVE CHEMISTRY-04
Course code	GE-04
Credits	4
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

1. Basic concepts of chemical energetics.
2. Different types of phase daigrams.
- 3

Title of the paper	PRACTICAL GENERIC ELECTIVE-04
Course code	PRACTICAL
Credits	2
Total Hours	

After successful completion of this paper, the students is expected to /enables to understand

1. Will be able to perform gravimetric analysis and also understand redox reactions.
- 2
- 3

Title of the paper	ORGANIC CHEMISTRY-04
Course code	CORE-11
Credits	4
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

- 1 Nucleic acids, amino acids, enzymes , proteins, lipids
- 2 Pharmaceutical compounds
- 3

Title of the paper	PRACTICAL ORGANIC CCEMISTRY-04
Course code	CORE-11 PRACTICAL
Credits	2
Total Hours	

After successful completion of this paper, the students is expected to /enables to understand

- 1 Estimations of glycine, protein

2 Saponification and iodine value of fat and oils

3

Title of the paper	PRACTICAL INORGANIC CCHEMISTRY-03
Course code	PRACTICAL
Credits	2
Total Hours	

After successful completion of this paper, the students is expected to /enables to understand

1. Gravimetric analysis and inorganic preparation.

2

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Title of the paper	PRACTICAL ORGANIC CCHEMISTRY-04
Course code	CORE-11 PRACTICAL
Credits	2
Total Hours	

After successful completion of this paper, the students is expected to /enables to understand

1. Estimation of glycine

2. Saponification and iodine value.

3

Title of the paper	PHYSICAL CHEMISTRY-05
Course code	CORE-12
Credits	4
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

1. The molecular structure using different methods of spectroscopy.

2. Characteristic of electromagnetic radiation.

3

Title of the paper	PRACTICAL PHYSICAL CHEMISTRY-05
Course code	CORE-12 PRACTICAL
Credits	2
Total Hours	

After successful completion of this paper, the students is expected to /enables to understand

1 Phase diagram of three component system

2 colloidal systems and its critical point

3

Title of the paper	DSE-01
Course code	DSE-01
Credits	4
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

1. . Have knowledge about the basic working principles of instrumentation of various spectrometry and also the separation methods and chromatography.

2

3

Title of the paper	DSE-01
Course code	DSE-01 PRACTICAL
Credits	2
Total Hours	

After successful completion of this paper, the students is expected to /enables to understand

1. Will be able to separate different components by using Thin Layer Chromatography and Paper chromatography.

2. Can also perform solvent extraction and determine its pH.

3

Title of the paper	DSE-02
Course code	DSE-02
Credits	4
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

- 1 To make them aware of the importance of green chemistry applications

- 2 Green synthesis using safer reagents

3

Title of the paper	DSE-02
Course code	DSE-02 PRACTICAL
Credits	2
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

1. Green synthesis

2. Preparation of biodiesel fuel from waste cooking oil

3

Title of the paper	INORGANIC CHEMISTRY-04
Course code	CORE-13
Credits	4
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

1. Know about the chemistry of organo-metallic compounds and the kinetics and mechanism in square planar and octahedral complexes.

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Title of the paper	PRACTICAL INORGANIC CHEMISTRY-04
Course code	CORE-13 PRACTICAL
Credits	2
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

1. Will be able to estimate a given metal ion and total hardness of water by complexometric titration.

2
3

Title of the paper	ORGANIC CHEMISTRY-05
Course code	CORE-14
Credits	4
Total Hours	0

After successful completion of this paper, the students is expected to /enables to understand

1 UV and NMR spectroscopy

2 synthesis of polymer and dyes and their applications

3

Title of the paper	PRACTICAL ORGANIC CHEMISTRY-05
Course code	CORE-14 PRACTICAL
Credits	2
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

1 Extraction of caffeine from tea leaves

2 Detection of bifunctional groups from organic compounds

3

Title of the paper	DSE-03
Course code	DSE-03
Credits	4
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

1 Industrial gases and metallurgy

2 Environment and its segments

3

Title of the paper	PRACTICAL DSE-03
Course code	DSE-03 PRACTICAL
Credits	2
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

- 1 Determination of DO, COD and BOD in water
- 2 Measurement of chloride, sulphate and salinity of water samples by titration method
- 3

Title of the paper	DSE-04
Course code	DSE-04
Credits	4
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

- 1 silicate industries and their importance
- 2 synthesis of better fertilizers
- 3

Title of the paper	PRACTICAL DSE-04
Course code	DSE-04 PRACTICAL
Credits	2
Total Hours	60

After successful completion of this paper, the students is expected to /enables to understand

1. Estimation of calcium.
2. Preparation of pigments
- 3